

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use several sheets if necessary) (PTO-1449)	ATTY. DOCKET NO.	SERIAL NO.
	19603/3641 (CRF D-933F)	Continuation of 09/480,515
	APPLICANT	
	Francis Barany, John Zebala, Deborah Nickerson, Robert J. Kaiser, Jr., and Leroy Hood	
	FILING DATE	GROUP ART UNIT
	Herewith	To Be Assigned

U. S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE
<i>mmr</i>	1	5,242,794	09/07/93	Whiteley, et al.	/		
	2	4,889,818	12/26/89	Gelfand, et al.			
	3	4,749,647	06/07/88	Thomas, et al.			
	4	4,988,617	01/29/91	Landegren, et al.			
<i>mmr</i>	5	4,879,214	11/07/89	Kornher et al.			

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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRAN- SLATION IF APPRO- PRIATE
<i>mmr</i>	6	336,731	5 Apr 1989	Europe	/		
	7	324,616	12 Jan 1989	Europe			
	8	130,515	25 Jun 1984	Europe			
	9	246,864	19 May 1987	Europe			
	10	89/09835	19 Oct 1989	WIPO			
	11	0 320 308	12 Dec 1988	Europe			
	12	2049879	1 March 2001	Canada			
	13	EP 0 373 962 A2	20 June 1989	Europe			
<i>mmr</i>	14	EP A 0 185 494	25 June 1986	Europe			

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

<i>mmr</i>	15	Barany, F., et al., "Genetic Disease Detection and DNA Amplification Using Cloned Thermostable Ligase,"
		Proc. Natl. Acad. Sci. USA, 88:189-93 (1991)
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		Barany, F., et al., "Cloning, Overexpression and Nucleotide Sequence of a Thermostable DNA Ligase-Encoding Gene,"
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	17	Takahashi, M., et al., "Thermophilic HB8 DNA Ligase: Effects of Polyethylene Glycols and Polyamines on Blunt-End Ligation
		of DNA," J. Biochem., 100:123-31 (1986)
<i>mmr</i>	18	Takahashi, M., et al., "Note -- Purification of HB8 DNA Ligase by Red Sepharose Chromatography,"
		Agric. Biol. Chem., 50(5):1333-34 (1986)
EXAMINER		DATE CONSIDERED
<i>mmr</i>		4/20/05
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 6 9; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		

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mmr	19	Lauer, G., et al., "Cloning, Nucleotide Sequence, and Engineered Expression of <i>Thermus Thermophilus</i> DNA, a Homolog of <i>Escherichia coli</i> DNA Ligase," <i>J. Bacteriology</i> , 173(16):5047-53 (1991)
	20	Lawyer, F.C., et al., "Isolation, Characterization, and Expression in <i>Escherichia coli</i> of the DNA Polymerase Gene from <i>Thermus Aquaticus</i> ," <i>J. Bio. Chem.</i> , 264(11):6427-37 (1989)
	21	Taguchi, H., et al., "A Chaperonin from a Thermophilic Bacterium, <i>Thermus Thermophilus</i> , That Controls Refoldings of Several Thermophilic Enzymes," <i>J. Biol. Chem.</i> , 266(33):22411-18 (1991)
	22	Schalling, M., et al., "Direct Detection of Novel Expanded Trinucleotide Repeats in the Human Genome," <i>Nature Genetics</i> , 4:135-39 (1993)
	23	Caskey, C.T., "Molecular Medicine - A Spin-off From the Helix," <i>JAMA</i> , 269:1986-93
	24	Chariot et al., "Molecular Cloning of a Mutated HOXB6 cDNA Encoding a Truncated Transactivating Homeodomain-Containing Protein," <i>J. Cell Biochem.</i> 71(1):46-54 (1998)
	25	Weiss, R., "Hot Prospect for New Gene Amplifier," <i>Science</i> , 254:1292-3 (1991)
	26	Birkenmeyer, L.G., et al., "Mini-Review -- DNA Probe Amplification Methods," <i>J. Virol Methods</i> , 35:117-26 (1991)
mmr	27	Holding, C., et al., "Diagnosis of Beta-Thalassemia by DNA Amplification in Single Blastomeres from Mouse Preimplantation Embryos," <i>The Lancet</i> pp. 532-535 (1989)
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mmr		4/20/95
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mm2	28	Wu, D.Y., et al., "The Ligation Amplification Reaction (LAR) - Amplification of Specific DNA Sequences Using Sequential Rounds of Template-Dependent Ligation," <i>Genomics</i> , 4:560-569 (1989)
	29	Takahashi, M., et al., "Thermophilic DNA Ligase Purification and Properties of the Enzyme from <i>Thermus Thermophilus</i> HB8," <i>J. Biol. Chem.</i> , 259:10041-10047 (1984)
	30	Barringer, K.J., et al., "Blunt-End and Single-Strand Ligations by <i>Escherichia coli</i> Ligase: Influence on an in vitro Amplification Scheme," <i>Gene</i> , 89:117-22 (1990)
	31	Matsuzawa, H., et al., "Purification and Characterization of Aqualysin I (a Thermophilic Alkaline Serine Protease) Produced by <i>Thermus Aquaticus</i> YT-1," <i>Eur. J. Biochem.</i> , 171:441-47 (1988)
	32	Winn-Deen, E.S., et al., "Sensitive Fluorescence Method for Detecting DNA Ligation Amplification Products," <i>Clinical Chemistry</i> , 37(9):1522-23 (1991)
	33	Landegren, U., et al., "A Ligase-Mediated Gene Detection Technique," <i>Science</i> , 241:1077-80 (1988)
	34	Barany, F., "The Ligase Chain Reaction in a PCR World," <i>PCR Methods and Applications</i> , 1:5-16 (1991)
71	35	Zimmerman, S.B., et al., "Macromolecular Crowding allows Blunt-end Ligation by DNA Ligases from Rat Liver or <i>Escherichia coli</i> ," 80:5852-5856 (1983)
mm2	36	Barany, F., "A Genetic System for Isolation and Characterization of <i>TaqI</i> Restriction Endonuclease Mutants," <i>Gene</i> , 56:13-27 (1987)
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mm	37	Cotton, R.G.H., "Detection of Single Base Changes in Nucleic Acids," <u>Biochem J.</u> , 263:1-10 (1989)
I	38	Konrad, E., et al., "Genetic and Enzymic Characterization of a Conditional Lethal Mutant of <i>Escherichia coli</i> K12 with a Temperature-Sensitive DNA Ligase," <u>Chem Abstracts</u> , 79(13):75781v, pp. 243-44 (1973)
	39	Hanahan, D. "Studies on Transformation of <i>Escherichia coli</i> with Plasmids," <u>J. Molec. Biol.</u> 166:557-80 (1983)
	40	Wu, D.Y., et al., "Specificity of the Nick-Closing Activity of Bacteriophage T4 DNA Ligase," <u>Gene</u> , 76:245-54 (1989)
	41	Landegren, U., et al. "DNA Diagnostics - Molecular Techniques and Automation," <u>Science</u> , 242:229-37 (1988)
	42	Xu, Q.-Y., et al., "Microsequence Analysis of Peptides and Proteins," <u>Analytical Biochem.</u> , 170:19-30 (1988)
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V	44	Matsada, G., et al., "The Primary Structure of L-1 Light Chain of Chicken Fast Skeletal Muscle Myosin and Its Genetic Implication," <u>FEBS Letters</u> , 126(1):111-113 (1981)
mm	45	Lathe, R., "Synthetic Oligonucleotide Probes Deduced from Amino Acid Sequence Data Theoretical and Practical Considerations," <u>J. Molec. Biol.</u> , 183:1-12 (1985)
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	46	Howard et al., "Cloning the <i>DdeI</i> Restriction-Modification System Using a Two-Step Method." <u>Nucleic Acids Research</u> 14(20):7939-7951 (1986)
	47	Devlin, "Textbook of Biochemistry, with clinical correlations," A Wiley Medical publication, pp. 985-995 (1982)
	48	Zebala et al., "Characterization of Steady State, Single-Turnover, and Binding Kinetics of the <i>TaqI</i> Restriction Endonuclease," <u>The Journal of Biology and Chemistry</u> 267(12):8097-8105 (1992)
	49	Davis et al., "Protein Splicing in the Maturation of <i>M. tuberculosis</i> RecA Protein: A Mechanism for Tolerating a Novel Class of Intervening Sequence," <u>Cell</u> 71(1):201-210 (1992)
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	52	Niece et al., "A Synthetic Peptide for Evaluating Protein Sequencer and Amino Analyzer Performance in Core Facilities: Design and Results," in Hugli, ed., <u>Techniques in Protein Chemistry</u> , Academic Press, Inc., pp. 89-101 (date unknown)
	53	Walsh et al., "Advances in Protein Sequencing," <u>Annual Review of Biochemistry</u> 50:261-284 (1981)
	54	Matsuda et al., "The Primary Structure of L-1 Light Chain of Chicken Fast Skeletal Muscle Myosin and Its Genetic Implication," <u>FEBS Letters</u> 126(1):111-113 (1981)
		55
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mm2	56	4,683,202	07/28/87	Mullis	—	—	
mm2	57	5,494,810	02/27/96	Barany et al.	—	—	

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mm2	60	Resnick et al., "Detection and Typing of Human Papillomavirus in Archival Cervical Cancer Specimens by DNA Amplification With Consensus Primers," <u>Journal of the National Cancer Institute</u> 82(18):1477-1484 (1990)
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